London

# THE PRESENT STATE OF *Weſtminſter* Bridge.

CONTAINING A

DESCRIPTION of the ſaid BRIDGE, as it has been ordered into Execution by the Right Honourable, *&c.* the COMMISSIONERS appointed by PARLIAMENT, and is now carrying on.

WITH

A TRUE ACCOUNT of the Time already Employed in the Building, and of the Works which are now done.

IN

## A LETTER TO A FRIEND.

*De quibus ignoras tace, de quibus*
*Certus es, loquere opportunè.*
Sixt. Philoſ. Sent. 152.

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*Weſtminſter, December* 8. 1742.

*SIR,*

I Send you, at your own Deſire, a ſhort Deſcription of the Bridge now building at *Weſtminſter*, with a true Account of the Works already done, and the Time employed therein.

You mentioned in your laſt, that, (*for want of being truly informed*) moſt People you converſed with did imagine that little or nothing has been done hitherto, and that the Bridge would not be paſſable theſe ten Years, becauſe they had ſome Notion, that it was the Intereſt, (and in the Power) of the People concerned therein, to make the Works laſt as long as ever they could.

I am going, Sir, to enable you to judge yourſelf, whether theſe People ſpeak out of Malice or Ignorance, or both; and you have my Conſent to make the Whole, or any Part of this Letter, as publick as you pleaſe.

In the firſt Place, Sir, you are to know, that *Weſtminſter* Bridge is built by a Commiſſion appointed and continued by the Authority of ſeveral Acts of Parliament, conſiſting of near two hundred Lords and Commoners; who, notwithſtanding their great Trouble and weariſome Attendance in the Diſcharge of the ſeveral important Truſts repoſed in them by the Legiſlature, have abſolutely no Kind of Salaries, Perquiſites, Fees, Rewards, or Conſiderations whatſoever, except (as a Nobleman among them nobly expreſſes it) *The Honour of doing what was thought impoſſible.*

But in order to obſerve ſome Method, I intend, Sir, to divide this Letter into three chief Articles: The *Firſt* is to contain a Deſcription of *Weſtminſter* Bridge as it is intended, with ſome Remarks thereon: The *Second* is to contain a true Account of the Time that has been employed in the Building; and the *Third* is to contain a true Account of the Works already done within that Time.

I. *Weſtminſter* Bridge is to extend over the River *Thames*, at a Place where it is 1223 Feet wide from Wharf to Wharf, which is above 300 Feet wider than the ſame River at *London Bridge*, or at *Lambeth*, and yet near 300 Feet narrower than it is at the Elbow between *Hungerford Stairs* and the oppoſite *Surrey* Shore.

In the Middle of the River, where the Bridge is building, there is a large Shoal of Sand and Mud, that divides moſt of the Waters into two Channels, which run pretty near along the two Shores.

At a common low Water, the River is not above five Feet deep in the Middle; but from ſeven to nine Feet in the deepeſt Parts of thoſe two Channels.

The Tide riſes in this Part of the River ſeldom leſs than eight Feet, or more than fifteen Feet perpendicular; ſo that, on the Top of a Spring Tide, the Water is twenty Feet deep in the Middle, and twenty-four Feet deep in the Channels.

The Velocity of the Stream of the *Thames* is always ſo gentle at this Place, that it ſeldom exceeds two and an half Feet *per* Second in the Tide of *Flood*, and two and a quarter Feet *per* Second in the Tide of Ebb.

The free Water Way, under the Arches of this Bridge, will be 870 Feet, which is 210 Feet more than was preſcribed in the firſt Act, and more than four times as much as the free Water Way left between the *Sterlings* of *London* Bridge; which, together with the Gentleneſs of the Stream, are the chief Reaſons why no ſenſible Fall of Water will ever ſtop, or, in the leaſt, endanger the ſmalleſt Boats, in their Paſſage, thro' the Arches.

The Breadth of *Weſtminſter* Bridge was fixed by the Commiſſioners at forty-four Feet, which is ſufficient to afford a large Foot-way about ſeven Feet wide on each Side, beſides commodious *Receſſes* over the Points of every Pier; all to be paved with broad Moor

Stones, raiſed about a Foot above the Carriage-way. The Space left between theſe two Foot-ways is for the Carriage-way, which will be wide enough for three Carriages and two Horſemen to go a-breaſt, or paſs one by the other without the leaſt Danger.

And as to the Aſcent or Deſcent of this Bridge, it will be ſo eaſy as not to exceed one Foot in thirty, which is hardly ſenſible.

*Weſtminſter* Bridge is to conſiſt of fourteen Piers, thirteen large, and two ſmall Arches, all ſemicircular, and two Abutments.

The Length of every Pier is about ſeventy Feet from Point to Point, and each End terminated with a ſaliant right Angle againſt either Stream.

The two middle Piers are each ſeventeen Feet wide at the ſpringing of the Arches, and the others decreaſe in Breadth equally on each Side by one Foot; ſo that the two next to the largeſt, are each ſixteen Feet wide; and ſo on to the two leaſt of each Side, which are twelve Feet wide at the ſpringing of the Arches.

Each of theſe Piers are four Feet wider at their Foundation than at the Top; and each of them is laid on a ſtrong Bed of Timber of the ſame Shape as the Pier, about eighty Feet long, twenty-eight Feet wide, and two Feet thick.

I preſume that you know it is a Precaution uſed in moſt heavy Buildings to lay their Foundations on Planks, or Beds of Timber, which (if ſound when laid) and always kept wet, will not only remain ſound, but grow harder by Time, as frequent Example hath ſhewn.

The Depths or Heights of every Pier are different; but none of them have their Foundations laid at a leſs Depth than five Feet under the Bed of the River, and none at a greater Depth than fourteen Feet under the ſaid Bed. This Difference is occaſioned by the Nature and Poſition of the Ground; for tho' the Foundations of all the Piers and Abutments are laid in a hard Bed of Gravel (which by boreing has been found to grow harder the deeper it was bored into) yet this Bed of Gravel lies much lower, and is more difficult to come at, on the *Surrey* Side, than on the *Weſtminſter* Side.

All the Piers are built the ſame in the Inſide as on the Outſide, of ſolid *Portland* Block Stones, none leſs (by the Contract) than one Ton, or twenty hundred Weight, unleſs here and there a ſmaller called a *Cloſer*, placed between four other larger Stones, but moſt of them are two or three Tons Weight, and ſeveral of four and five Tons. All the Stones are ſet in (and their Joints filled with) a *Cement* called *Dutch Tarris*, and they are faſtened together beſides with Iron *Cramps* run in with Lead, and ſo placed that none of thoſe *Cramps* can be ſeen, or ever be affected by the Water, as ſoon as the Arches are begun.

All the Arches of *Weſtminſter* Bridge are ſemicircular, that Form being one of the ſtrongeſt, and the beſt adapted for Diſpatch in Building.

They all ſpring from about two Feet above low Water Mark, and from no higher, which renders the Bridge much ſtronger than if the Arches ſprung from taller Piers, beſides the ſaving of a great Quantity of Materials and Workmanſhip; and the Bridge at the ſame Time has as little an Aſſent as it is poſſible to have, together with the Advantages juſt now mentioned, and ſeveral others.

The middle Arch is ſeventy-ſix Feet wide, and the others decreaſe in Width equally on each Side by four Feet; ſo that the two next to the middle Arch, are ſeventy-two Feet wide; and ſo on to the leaſt of the large Arches, which are each fifty-two Feet wide. As to the two ſmall ones cloſe in Shore to the Abutments, they will be each about twenty-five Feet wide.

The *Soffiet* of every Arch is turned and built quite thro', the ſame as in the Fronts, with large *Portland* Blocks; over which is built (bonded in with the *Portland*) another Arch of *Purbeck* Stone, four or five times thicker on the *Reins* than over the *Key*, ſo calculated and built, that by the Help of this ſecondary Arch, together with the incumbent Load of Materials (but not without that Load) all the Parts of every Arch are in *Equilibrio*: That is to ſay, the *Thruſt*, or *lateral Preſſure*, which all Arches, built in the common Way, do (more or leſs, according to their Figure and Conſtruction) exert to overſet their Piers, is, by a proper Diſpoſition of the Materials, intirely counter ballanced and deſtroyed; ſo that each Arch of *Weſtminſter* Bridge, after it is built, could ſtand ſingle without affecting, or being affected by, any of the other Arches.

Moreover, between every two Arches a Drain is managed to carry off the Water and Filth, which, in Time, might penetrate and accumulate in thoſe Places, to the great Detriment of the Arches (ſome Bridges having been ruined for want of this Precaution) which ſhould be obſerved in all conſiderable Stone or Brick Bridges: And yet (as far as I have been able to learn) it has been always omitted.

There are ſeveral other Particulars worth mentioning in the Conſtruction of theſe Arches; but this would throw me into a Detail too teedious for a Letter. Therefore I ſhall conclude this Article with obſerving to you, that the Arches are parted in each Front; and the Points of the Piers decorated with triangular Pedeſtals, over each of which are placed a ſemi-octogonal Tower of *Portland* Stone, which Towers form the Receſſes of the Foot Ways, and ſupport a *Portland* Stone *block'd Freeze* and *Corniſh*, which ranges round every Tower, and over all the Arches in each Front.

Each of the two Abutments have their *Land Breaſts* extended twenty-five Feet on each Side above and below the Bridge, in order to ſtrengthen them, and to afford that Room which is always ſo much wanted at the Foot of all Bridges; and yet is ſo ſeldom to be met with in ſuch Places.

*Laſtly*, Juſt above and below each Abutment, there are large and commodious Flights of Moor Stone Steps, for the ſhipping and landing of Goods and Paſſengers.

I think, Sir, this ſhort Deſcription is ſufficient to give you an Idea of *Weſtminſter* Bridge. I hope ſome Perſon properly qualified, will find it worth his while, after this Bridge is finiſhed, to give a full Deſcription thereof, and of the many new Machines, Engines and Mechanical Operations which have been made uſe of in the Courſe of theſe Works. Such an Account would not only be curious, but of great Uſe to thoſe Perſons who may hereafter be employed in Works of this Nature. In the mean time give me leave to add a few Remarks.

*Weſtminſter* Bridge will be one of the longeſt Stone Bridges in *Europe*, and perhaps the longeſt of thoſe that are always in Water; for, according to the beſt Accounts I have been able to get, the only Bridges in *Europe*, that can be compared to this for Length, are thoſe of *Ratisbon* and *Dreſden* in *Germany*;

thoſe of *Lyons* and *St. Eſprit* in *France*; and the *Puente Segobiana*, near *Madrid* in *Spain*. Moſt of theſe long Bridges are very irregular, very ill built, and very narrow; and are, more properly, long Cauſeways, built chiefly on dry Land, which become Bridges only when the Rivers they croſs over do overflow.

No Bridge, that I know of, can be compared to *Weſtminſter* Bridge for Strength, Goodneſs of the Materials and Solidity, for the following Reaſons:

1*ſt*. That all the Piers are laid at a conſiderable Depth under the Bed of the River, and all of them in a hard Bed of Gravel, which never requires piling, it being, after *Rock*, the beſt Sort of Foundation; whereas the uſual Method of building Stone or Brick Bridges over large Tide Rivers, is to build them upon *Stilts*; that is, driving Piles in the Bed of the River, ſawing their Heads about low Water Mark, and often above; then laying ſome Planks to erect the Piers thereon. Such are the Foundations of *London* and *Rocheſter* Bridges, and of a great many others in *Great Britain*, as well as Abroad.

2*dly*. That the Materials are the beſt four kinds of Stone (for the ſeveral Uſes to which they are employed) that can be had in *London*; and they are all, not only very durable, but ſome of the heavieſt in *England*, ſome Kinds of Marble only excepted.

*3dly.* That the Size and Diſpoſition of thoſe Materials are ſuch, that there is no falſe Bearing, or ſo much as a falſe Joint, in the whole Bridge; ſo that every Part is fully and properly ſupported; and whatever ought to be of one Stone, is not made of ſeveral ſmall ones, as is but too common in other Buildings.

*4thly.* That inſtead of Chalk, ſmall Stones, or Rubbiſh, with which the Inſide of moſt Buildings are filled, the Piers are entirely built with ſolid Blocks of *Portland*, and ſecured as I have explained above.

*5thly.* That in building the Arches, ſuch Precautions have been uſed as have been obſerved in no Birdge that I know of; ſuch as building the ſaid Arches quite thro' with the ſame ſort of large Stones as in the Fronts, deſtroying their lateral Preſſures by a proper Diſpoſition of the Materials in, between and over thoſe Arches.

And, *laſtly*, providing towards their future Security by proper Drains mentioned above.

Nothing is more common in the Conſtruction of Bridges, than for ſome of the Piers to ſink, or at leaſt ſo far give way, as to occaſion the Neceſſity of rebuilding ſome of them even before the Fabrick is paſſable; whereas none of the Piers of *Weſtminſter* Bridge have altered or ſettled in the leaſt from the firſt Day they were built, notwithſtanding their prodigious Weight, and the great Load of ſome thouſands of Tons, which the middle ones already bear. And here, Sir, give me leave to aſſert the Truth, and to aſſure you, that all the Reports to the contrary are *falſe*, *malicious* and *ſcandalous.*

I ſhall end theſe Remarks by obſerving to you, that the Methods hitherto uſed in the Conſtruction of moſt Bridges, do either wholly ſtop the Navigation, or greatly embarraſs it, not only while the Fabrick is building, but even after. Whereas the Methods employ'd in building *Weſtminſter* Bridge never did, or ever will ſtop or hinder the free Navigation of the River for all Sorts of Veſſels and Boats one ſingle Moment.

II. I proceed now, Sir, to the ſecond Part of this Letter, containing, *A true Account of the Time hitherto employ'd in the Building.* The firſt Act for building *Weſtminſter* Bridge was paſs'd in 1736; but *ſeveral Doubts and Difficulties having ariſen about fixing the Place where the ſaid intended Bridge ſhould be built.* The Place was not finally determined but by an Act of Parliament paſſed the 20th of *May*, 1738, and not before.

No Plan or Deſign for the ſaid Bridge was agreed upon by the Commiſſioners before *May* 1738. The Deſign then fixed upon was a curious *Wooden Superſtructure*, of the Invention and Deſign of Mr. *James King*. This Superſtructure was to be adapted to the Stone Piers, and Openings of a Deſign for a Stone

Bridge preſented to the Commiſſioners about the ſame Time by their Engineer of the Works, in caſe the Methods which he had contrived for building the Piers proved practicable; and in caſe thoſe Methods ſhould fail, the ſaid wooden Superſtructure was to ſtand upon wooden Piles.

The firſt two largeſt middle Piers were contracted for, by way of Trial of this new Method of Building, on the 22d of *June*, 1738.

And the firſt Orders for beginning to carry Matters into Execution, were iſſued the latter End of *June* 1738, and not before.

Give me Leave, Sir, before I proceed further, to acquaint you, that, in Works of this Conſequence, it is uſual to allow the Undertakers a Year, or more, to collect Materials, and make the neceſſary Preparations; but the Perſons concerned in the Direction and Execution of *Weſtminſter* Bridge did not take up, in their Preparations, above ſeven Months; for, between the End of *June*, 1738, and the End of *January* following, the Carpenters conſtructed ſeveral Machines; among others, an Engine to drive Piles much preferable to the common ones, contrived by the late Mr. *James Vauloüe*; they prepared a great many Piles ſhod and hooped with Iron, and drove in their proper Places as many as were neceſſary to encloſe and defend the Works of the two middle Piers: For the building of which, they conſtructed a new Sort of *Caiſſon*, containing above 150 Loads of Timber, and of more Tonnage or Capacity than a Man of War of forty Guns. They launched this *Caiſſon*, brought it over the Place where it was to be ſunk, and compleated it ſo as to be fit for Service. The Diggers, or Ballaſtmen, dug the Foundation of the firſt Pier to the Depth of five Feet under the Bed of the River, levelled it, and kept it level by proper Incloſures. The Maſons raiſed a large Quantity of *Portland* Blocks out of the Quarries, worked them, and brought them into the River. All theſe Preparations being finiſhed on the 29th of *January*, 1738-9, *the firſt Stone of the Weſtern middle Pier of* Weſtminſter *Bridge* was laid by the Right Honourable the Earl of *Pembroke*, *&c.*

This new Method of building Piers having ſucceeded, on *May* the 23d, 1739, the Commiſſioners contracted for the two Abutments, including the two ſmall Arches, and the two Abutment-Piers cloſe in Shore, in the ſame Contract, as Parts of the ſaid Abutments.

The Execution of the Works continuing to ſucceed, even beyond Expectation, after ſeveral Meetings and mature Deliberations, the Commiſſioners finally reſolved, on the 5th of *March*, 1739-40, that the intended *Wooden Superſtructure* ſhould be laid aſide, and that *Weſtminſter* Bridge ſhould be built with *Stone*; and, on the 12th of the ſame Month, the Deſign for *Weſtminſter* Bridge, and the Plan for the *new Streets*, on the *Weſtminſter*

*minſter* Side, were finally determined by the Commiſſioners.

The Deſign for *Weſtminſter* Bridge, then ordered into Execution and now Building, as to the Number, Size and Dimenſions of the Piers and Arches, or as to the Choice and Diſpoſition of its ſeveral Materials (both Inſide and Outſide) is the ſame, without any Alterations, as that which their Engineer of the Works had preſented to them in *May* 1738, when the Piers only were ordered into Execution: But as *to Decorations and Ornaments*, the preſent Deſign has been much better conſidered, and is more magnificent than the former.

On the 2d of *April*, 1740, the Commiſſioners contracted for the Maſon's Work of the three middle Arches, with Meſſieurs *Andrews Jelſe* and *Samuel Tuffnell*, the ſame Perſons who had contracted for building the Piers.

On the 30th of *June*, 1740, the Commiſſioners contracted with Mr. *James King* for the Carpenter's Work of the three Centers neceſſary for turning theſe three middle Arches according to a Deſign of the ſaid Mr. *King*; which Deſign their *Engineer* recommended as preferable to his own, and to ſeveral other Deſigns for Centers.

On the 28th of *January*, 1740-1, the Commiſſioners contracted with Meſſieurs *Jelſe* and *Tuffnell* for the ſix leaſt Piers.

On the 5th of *June*, 1741, the Commiſſioners contracted with Mr. *King* for a fourth Center.

And, laſtly, on the 2d of *April*, 1742, they contracted with the ſame Perſons for the five Arches contained between the three middle ones and the *Weſtminſter* Abutment, and for the four remaining neceſſary Centers, which being ſo contrived as to ſerve for the ſimilar Arches on the *Surrey* Side, will ſave a conſiderable Sum of Money, and ſomeTime.

In all theſe Contracts you are to obſerve, that, the Commſſioners ſuited, as near as they could, the Quantity of Works they contracted for, with the Sums of Money they were poſſeſſed of.

Now, Sir, from the 29th of *January*, 1738-9 (when the firſt Stone was laid) *to this Day*, *December* 8, 1742, the Time elapſed is three Years, ten Months and nine Days, or 201 Weeks; but in order to have the Time really employed in the Building, I muſt acquaint you,

That all the *Portland* Stone is brought by Sea from the Iſland of that Name in *Dorſetſhire*, the Diſtance being upwards of 250 Miles; and tho' it is not difficult to raiſe great Quantities of Stone out of thoſe Quarries; yet, as there is but one Pier in the whole Iſland, whereat ſuch large Stones as are employed in the Bridge, can be ſhipped off; and that this Pier lies unſheltered on the Eaſt Side of the Iſland, the loading of any Veſ-

ſel

ſel is not only dangerous, but utterly impracticable, in freſh Eaſterly Winds.

All the *Purbeck* Stone is brought by Sea from a Place in *Dorſetſhire*, called *Sandwich* (or vulgarly *Swanidge*) the Diſtance being upwards of 220 Miles.

All the Moor Stone is brought by Sea from *Devonſhire* or *Cornwall*, the Diſtance being upwards of 330 Miles.

And all the *Kentiſh* Ragſtone is brought by Water from the Neighbourhood of *Maidſtone* up the River *Medway*, the Diſtance about eighty Miles.

When the Veſſels that are to bring theſe Materials are loaded (tho' the Winds ſhould be fair for them) they cannot ſail in Times of Embargoes, and dare not ſail when there is any extraordinary Preſs of Seamen for the neceſſary Service of the Government.

Another great and unavoidable Hindrance to the receiving any Materials are the *Eaſterly Winds*, when they continue for ſeveral Weeks: For, as the Number of Workmen employed by the Maſons is always in Proportion to the Quantity of Materials they have, or ſhortly expect, the greateſt Stock they can provide is exhauſted in a few Weeks, if the Eaſt Winds hinder freſh Supplies from arriving in Time, which has already happened more than once.

Some unavoidable Interruptions have alſo been occaſioned by the Loſs of ſome Veſſels in the Service of the Bridge, five of them having been caſt away, at different Times, by Storms of Weather, and other Accidents.

Moreover, when the Stone is in Town, the Weather does not always permit the Workmen to uſe it. I need not tell you, Sir, that in Times of *ſevere Froſt*, no Mortar or *Tarris* can be uſed, and conſequently the ſtone Work is all that Time unavoidably at a Stand.

Another unavoidable Hindrance is, that when the River is frozen over, or only full of Ice, the Piling, and other timber Work, has often been carried away, or conſiderably damag'd, which muſt be repair'd, before the ſtone Works can go on.

To all theſe muſt be added, a conſtant and unavoidable Hindrance, *viz.* the Riſe of the Tide twice every Day, which by covering the Works for many Hours, during the Time of Building the Piers, Abutments, and Part of the Arches, has ſhorten'd the Day's Work, in the two firſt Years of this Building, to about five Hours.

And it is notoriouſly known, that during the four Years laſt paſt, the eaſterly Winds have blown much longer, and the Winters have been (as to Froſt at leaſt) much more ſevere, than for twenty Years before.

Now it appears from the Journals of the Works, that the Interruptions occaſioned by *Embargoes*, or *extraordinary Preſſings of Seamen*, amount to ſix Weeks.

The Interruptions occaſioned by the frequent long Continuance of the *eaſterly Winds*, amount to eleven Weeks.

The Interruptions occaſioned by the ſeveral long and unuſual *Froſts* in the three laſt Winters, amount to fourteen Weeks.

And the Interruptions occaſioned by the abſolute Neceſſity of repairing the *Damage* the Ice had done at different Times to the Piling and timber Work, has taken up about five Weeks.

All theſe unavoidable Interruptions, without taking Notice of any other, amount in all to thirty-ſix Weeks; which being ſubſtracted from the whole Time elapſed ſince the firſt Stone was laid, *viz.* 201 Weeks; there remains for the utmoſt Extent of the Time employed hitherto in the Building three Years, eight Weeks and three Days, or 165 Weeks, which makes 990 working Days, above the Half of which cannot be computed on Account of the Tide, at more than five Hours Work each Day.

III. I am now come, Sir, to the laſt Part of this Letter, which is to give you a true Account of what Parts of the Bridge are already built.

Three-fourth Parts of the two Abutments have been built ever ſince *February* 1740-1, both of them have been filled up afterwards to the proper Height, *viz.* above the Reach of the higheſt Tides, and they have proved very uſeful ever ſince to depoſite or work-up Materials, &c.

The twelve largeſt Piers have been intirely built and finiſh'd ever ſince the 16th of *October* laſt, and the Digging of the Foundation of the Abutment-pier next to *Weſtminſter* nearly finiſh'd.

Out of the thirteen large Arches, the middle Arch, and the next to it on the weſt Side are ſo far built and finiſh'd, as to be paſſable, were the Reſt of the Arches ſo too—The two Arches on each Side next to theſe are turn'd and key'd in *Portland* Stone—A fifth Arch is raiſed about twenty Feet high on one Side, and about fourteen Feet high on the other. —A ſixth and a ſeventh Arch are rais'd about fourteen Feet high on one Side of each.

And tho' I only mention in this Account the *ſtone Work* that is already done, you eaſily conceive, Sir, that no Part of all this could have been performed, without a vaſt Quantity of *Carpenter*'s Work, ſuch as *Caiſſons, Piles, Centers, Scaffolds*, &c. and a great deal of other Work and Labour, ſuch as *Smith's, Digger's, Lightermen's, Watermen's*, &c. which I purpoſely omit to avoid entering into a Detail more curious than entertaining.

But in order to give you ſome Ideas of the Fxtent, and of the Quantities of Materials already employ'd, I ſhall firſt make uſe of ſome familiar Examples or Compariſons—

Firſt, as to the Size of the Piers and Arches, the Ground Plan of one of the middle Piers of *Weſtminſter* Bridge having been laid down in Chalk Lines on the Floor of the *Painted Chamber*, near the *Houſe of Lords*, there was hardly Room to go along the Walls, without treading on the outward Lines, tho' that Room is full 66 Feet by 25. So that the Inſide of one of the *Caiſſons* in which the Piers are built, is as to Length and Breadth, very near the ſame as the ſaid *Painted Chamber*. And the Floor of the ſaid *Painted Chamber*, was found, upon Trial, not ſpacious enough to lay down upon it only one Half of the Front of the middle Arch.

As to Quantity of Materials (ſtill confining myſelf to the ſtone Work) it can be prov'd, that the *two largeſt Piers of* Weſtminſter *Bridge*, contain full 3000 cubic Feet, or near 200 Ton Weight of ſolid *Portland* Stone, more than is contained in all the Stone employ'd in the *New Treaſury*, not only in the Fronts, but in all the Inſide, Stair-caſes, Half-paces, and even Ciſterns included.

It can alſo be proved, that the Quantity of ſolid Stone contained in *the middle Arch of* Weſtminſter *Bridge*, excluſive of the Freeze, Corniſh and Footways, is full 500 Tons more than double of the whole Quantity of Stone in the *Banquetting Houſe at Whitehall*.

And laſtly, that there is already above 40,000 Pounds Worth of ſtone, and other Works, in the Piers and Abutments of *Weſt-*

*minſter* Bridge always under Water; or under Ground, beſides what can ever appear above the loweſt low-water Mark.

Moreover, in order fully to enable you to compare the Quantities of Materials with the Time employed in uſing them, I will now make uſe of thoſe *ſtubborn Things* call'd *Numbers*: And confining myſelf to the ſtone Work only (for the Reaſons I have already menti-on'd) it can be proved, that the Total Amount of the Quantities of *Portland*, *Purbeck*, *Moorſtone* and *Kentiſh Ragſtone*, which have been employed hitherto (*viz.* to this 8th Day of *December* 1742) in the Building of the Abutments, Piers and Arches, is upwards of 579,530 cubic Feet, or upwards of 38,200 Ton Weight, computing as uſual 112 Pounds *Averdupois* to a hundred Weight, and 20 ſuch Hundreds to one Ton Weight.

This Quantity of ſtone Materials being divided by the Number of working Days 990, in which Time it has been uſed, gives upwards of 38 and a Half Ton Weight for the ſtone Work done *per* Day at an Average; and if Notice was taken of thoſe Holidays which the Workmen are accuſtom'd to keep (ſuch as are among others, ſeveral Days in every Year, at *Chriſtmas*, *Eaſter* and *Whitſuntide*) and ſeveral other Days loſt by Storms of Winds, or heavy continual Showers of Rain, which either hinder the Workmen, or drive them quite away; the Quantity of ſtone Materials uſed, will certainly amount to full

40 Tons a Day taken at an Average, beſides all the Work done in the ſame Time by the *Carpenters*, *Smiths*, *Diggers*, &c.

And upon the whole, notwithſtanding the many unavoidable Interruptions which the Execution of all Buildings erected in Water is more liable to, than the Execution of Buildings on dry Land; let thoſe who have been ſo clamorous in upbraiding the Perſons concern'd in *Weſtminſter* Bridge with Dilatorineſs (without even knowing what could be done, or what was done) find out and name any one publick or private Building, even on dry Land, wherein ſuch large Quantities of Materials have been employed in ſo ſhort a Time as in *Weſtminſter* Bridge.

I beg Leave to add a few Lines, in order to expoſe the falſe Notions of thoſe Perſons who have imagined it was the Intereſt, or in the Power of any Perſons to delay the Building or compleating of *Weſtminſter* Bridge.

Firſt as to the Commiſſioners; ſince all the Works are ordered by, and carried on under their Authority, it cannot abſolutely be denied, that it has not been, and may not ſtill be, in their Power to occaſion Delays; but if it be conſidered who thoſe Commiſſioners are, and that they have nothing, and can expect nothing, but Trouble for their Pains (as I mentioned in the Beginning of this Letter) the Notion of the Works being delay'd by the Commiſſioners muſt neceſſarily vaniſh. And I am certain, that if you knew the Pains they have taken, do ſtill take, and are like to take, you would join with me *in admiring the publick Spirit* of thoſe who attend their Boards and Committees, and in *wondering at their Patience,* not only in reſpect to the Affairs of the *Bridge,* but in reſpect to the Affairs of the *new Streets,* which, I am well informed, takes up much the greateſt Part of their Time.

As to thoſe Perſons, in general, who are employ'd by the Commiſſioners, it is my own private Opinion, that they all have, in their ſeveral Provinces, promoted the Works to their utmoſt; but to give you ſomething of more Weight than my own Opinion, I muſt inform you, that above nine-tenth Parts of the Works (and in ſhort all that can be done by Contract) is contracted for; that the Commiſſioners never enter into thoſe Contracts but with the greateſt Caution, obliging the Artificers they contract with, to find all ſuch Securities as are directed by the Acts of Parliament, and limiting them, as to *Time* as well as to *Prices:* Which Contracts being once paſs'd, be aſſured, that *all thoſe Perſons* I am ſpeaking of *put together* (were it ever ſo much their Intereſt) cannot retard the Execution of the Works ſo contracted for, one ſingle Day. And if I had a Mind to be particular, I could name, at leaſt, one of them, whoſe Intereſt is ſo directly oppoſite to his occaſioning Delays, that he knows *his Reputation, his Fortune, and his future Eaſe,* do very much depend on his forwarding the Works, and compleating the Whole as ſoon as poſſible.

*Laſtly*, As to the Artificers being accuſed of wilful Delays; ſuch Aſſertions cannot certainly come from Perſons uſed to Buſineſs; who can imagine thoſe People will delay Works which they are not paid for, but in part, till they have compleated their Contracts; for the Commiſſioners always take care to be ſome thouſands of Pounds in Arrear with their ſeveral Artificers.

I have advanced in this Letter no Facts but what I can prove, and conſequently none but what you may depend upon: So that, when at any time hereafter you hear any Reports in any wiſe contradictory to this Account, I hope you will treat them with the Contempt they deſerve: For, were you to trace the Authors of every falſe and malicious Story that has been raiſed about *Weſtminſter* Bridge, and from what Motives, you would find ſome who ſpeak out of *Diſappointment* and *Malice*, being ſorely vexed that any Undertaking ſhould be carried on with Succeſs, wherein they have no Share—Some, who ſpeak out of *Envy*, becauſe they can lay no Claim to any Part of that Succeſs—Others, who ſpeak out of *Vanity*, in order to paſs upon thoſe who know ſtill leſs than they, for *Men of Taſte*, or great *Connoiſſeurs* in Buildings—Others (perhaps no ways biaſſed) who ſpeak at Random, or upon no better Information than Wartermen's, or ſome ſuch *impartial Evidences.*

But you know, Sir, let a Story be ever ſo ridiculous or improbable, as ſoon as it becomes Part *of the Lies of the Day,*

*Mobilitatè viget, Vireſque adquirit eundo.*

currently circulating like other *common Traſh, Scandal* or *Impertinence* through the ſhallow Channels of *idle Fellows, Ear-Wigs, Danglers* and *old Women.*

Now, Sir, if you expect, before I conclude this Letter, that I ſhould give you a particular Account of *what Sums* Weſtminſter *Bridge has coſt hitherto? When it is likely to be paſſable?* And, *What will the whole Expence amount to?* You are miſtaken; I never promiſed you any ſuch thing. However, in anſwer to the firſt Queſtion, I am informed, that it appears from the Commiſſioners Accounts (at leaſt ſo far as they have been examined) that the Expence of building the twelve largeſt Piers already finiſhed, is above four thouſand Pounds leſs than the Eſtimates which their Engineer had made of them and laid before the Commiſſioners, before they entered into Contracts; as to the Amount thereof, they are laid yearly before both Houſes of Parliament, to which I refer you.

As to the ſecond Queſtion, I conjecture, from the forward State the Bridge Works are now in, that if the Commiſſioners are enabled to contract in time for the five Arches on the *Surrey* Side, as yet not contracted for, it is highly probable the Bridge may be paſſable in about three Years.

And as to the laſt Queſtion, which, by the by, is not at all material to you, or to me, or to a great many others who are very anxious about it; I am confident that you are acquainted with more Lords, Members of Parliament, and Commiſſioners, than I am. However, the very next Seſſions after the Bridge is paſſable, I intend to procure, and do myſelf the Honour of tranſmitting to you, *An Abſtract of the whole neat Expence of* Weſtminſter *Bridge*, and of the *incidental Charges* thereof, excluſive of *the whole neat Expence of the new Streets leading to and from the Parliament Houſe, Courts of Judicature, and the ſaid Bridge*; and of the *incidental Charges thereof.* In the mean time be aſſured, that I am, with the utmoſt Sincerity,

SIR,

*Your very affectionate Friend*

*And humble Servant.*

*POST-*

# *POSTSCRIPT.*

HAVING ſome Paper left, I chuſe to fill it with the following *Scheme* of the true Diſpoſition, and the Widths of the *Abutments, Piers* and *Arches* of *Weſtminſter* Bridge, all expreſt in Feet. The Piers are named according to the Order of Time in which they were built, and the Numbers placed between (thoſe which expreſs the Widths of the Piers) do expreſs the Width of the Arches.

Pleaſe to obſerve, that if two Feet be added to half (the Number of Feet expreſſing) the Width of any Arch, the Sum will expreſs the Heigth of that Arch at a common low Water: For Example, the middle Arch is ſeventy-ſix Feet wide, whence adding two to thirty-eight (the half of ſeventy-ſix) the Sum forty Feet expreſſes the Height of the middle Arch at low Water.

You may alſo find, by adding the proper Numbers, the Proportion of the *Openings, or free Water Way, to the Solids,* and to ſave you that Trouble.

| | Feet. | |
|---|---|---|
| The Widths of all the Arches | 870 | Free Water Way. |
| The Widths of the Piers and the two Land-breaſts | 353 | Solids. |
| Total Length of *Weſtminſter* Bridge | 1223 | Width of the *Thames.* |

| | | |
|---|---|---|
| *Surrey* Abutment | 77½ | Land Breaſt. |
| | 25 | Abutment Arch. |
| | 12 | Abutment Pier. |
| The Widths of the Piers and Arches of *Weſtminſter* Bridge. | 52 | |
| | 12 | Twelfth Pier. |
| | 56 | |
| | 13 | Tenth Pier. |
| | 60 | |
| | 14 | Eighth Pier. |
| | 64 | |
| | 15 | Sixth Pier. |
| | 68 | |
| | 16 | Fourth Pier. |
| | 72 | |
| | 17 | Second Pier. |
| | 76 | |
| | 17 | Firſt Pier. |
| | 72 | |
| | 16 | Third Pier. |
| | 68 | |
| | 15 | Fifth Pier. |
| | 64 | |
| | 14 | Seventh Pier. |
| | 60 | |
| | 13 | Ninth Pier. |
| | 56 | |
| | 12 | Eleventh Pier. |
| | 52 | |
| *Weſtminſter* Abutment. | 12 | Abutment Pier. |
| | 25 | Abutment Arch. |
| | 77½ | Land Breaſt. |

*FINIS.*

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